DOCUMENT RESUME

ED 027 818 HE 000 420

By- Yuker, Harold E.
Effects Of Repeating The Graduate Record Examination.
Hofstra Univ., Hempstead, N.Y. Center for the Study of Higher Education.
Report No-R-71
Pub Date Sep 68
Note- 4p.
EDRS Price MF-$0.25 HC-$0.30
Descriptors- *Academic Achievement, Grade Prediction, *Graduate Students, *Higher Education, *Performance, Testing, *Test Results

A study of all Graduate Record Examination (GRE) scores reported to Hofstra University between September 1963 and February 1968 revealed that 27 persons had repeated the verbal part of the GRE, 27 retook the quantitative part, and 39 retook the advanced test. The interval between test and retest ranged from 2 to 40 months. The GRE scores of students who took the examination more than once were compared, and efforts were made to relate changes in the scores to the time that elapsed between the taking and retaking of the examination. The data revealed that a higher score was obtained by 59% of those retaking the verbal portion, 70% of those retaking the quantitative section, and 90% of those repeating the advanced test. Although the results are tentative because of the smallness of the sample, it is concluded that the effect of retaking the GRE varies, depending on the section of the test taken and when it is taken. The average increase in scores on the verbal section was 21, and there was little relationship between the increase and the time period between test and retest. The greatest increase was obtained on the quantitative test when it was retaken after one or two months, and the average increase was 30 points. The increase obtained in the advanced test scores was greater when there was a longer lapse of time between first and second administrations, and the average increase obtained was 64 points. (WM)

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

OFFICE OF EDUCATION

HE000 420

Report No. 71
September 1968

CENTER FOR THE STUDY OF HIGHER EDUCATION

HOFSTRA UNIVERSITY

Effects of Repeating the Graduate Record Examination

Harold E. Yuker

Purpose. The purpose of the present study was to compare GRE scores obtained by students who took the GRE more than once, and to relate changes in scores to the time that elapsed between taking the examination the first time and taking it a second time.

Review of the literature. R. A. Weiss (1961), in a review of the literature dealing with the effects of repeating various types of tests, drew several conclusions: 1) Practice tends to improve performance on tests of intelligence and scholastic aptitude; 2) The effects of the first and second repetitions are significant, but later repetitions have little effect; 3) Significant practice effects have been demonstrated for time intervals of two weeks to three months; 4) The more intelligent subjects appear to benefit the most from practice.

A study of the effects of retaking the Scholastic Aptitude Test by Levine and Angoff (1958) reported that the students gained an average of ten points on the first retest, and another ten points on the second retest. There was no gain on the third retest.

Recently, Campbell, Hilton, and Pitcher (1967) reported on the effects of repeating the Graduate Record Examination. Their study was based on results obtained from 783 persons who responded to a questionnaire sent out to 984 persons who took the GRE in both November, 1962 and January, 1963. Their results indicated that in the two month period there was an average increase of 25 points in the verbal score, an average increase of 16 points in the quantitative score, and an average score gain of about 30 points in the advanced test. There were large individual differences with some persons showing score increases of as much as 180 points and others showing decreases of 230 points. Over one-third of those who took the test a second time had a score change in excess of 50 points. None of the differences in mean scores were statistically significant, however.

When change in score was related to the amount of time spent preparing for the advanced test, it was found that students who reported

that they devoted more than five hours to preparation for the second test showed an average gain of over 40%, while those who reported no special preparation showed an average gain of about 15%.

Procedure. The present study utilized all Graduate Record Examination scores reported to Hofstra University for the period September, 1963 through February, 1968. During this period there were 27 individuals who repeated the verbal part of the GRE, 27 who repeated the quantitative part of the GRE, and 39 who repeated an advanced test. The interval between test and retest ranged from two to forty months. The scores made on the two administrations were compared for all of these repeaters.

Results. The data, while based on a relatively small number of students, indicated that when a person retakes the Graduate Record Examination, it is probable that he will achieve a higher score than he did originally. In this study, a higher score was obtained on the second testing by 59% of those who retook the verbal test, 70% of those who retook the quantitative test, and 90% of those who retook an advanced test. This indicates that the odds in favor of a better score the second time around are three to two on the verbal test, about two to one on the quantitative test, and nine to one on the advanced test.

The extent of the score increases is given in Table 1 which presents the average increase and the amount of variability in the increase for each of the three tests (on the advanced test, data for all specialties were lumped together). These data strikingly document the changes that occur when a student retakes the GRE. Most students can

Table 1

Score Changes in Retaking the GRE

Test	Number	Mean Change	Standard Deviation	Range	Percent Higher
Verbal	27	+21	62	-120 to +140	59%
Quantitative	27	+30	72	- 80 to +180	70%
Advanced	39	+64	52	- 20 to +190	90%

expect to obtain higher scores on all three parts of the GRE. The least improvement will be shown on the verbal test, an intermediate amount on

the mathematics test, and a large improvement on the advanced tests. Nine out of ten students can expect to increase their scores by about 60 points when they retake the advanced test. In interpreting these figures, it should be noted that the improvement in score on the verbal and quantitative sections is not very great, nor are the odds in favor of an improved score. On the advanced test the chances of improvement and the average amount of improvement appear to be great enough to justify the retaking of the GRE.

The data on both the verbal and the quantitative tests showed regression effects; that is, persons whose first scores were high did not improve as much as those who had low original scores. On the verbal test, eight persons with original scores of 600 or better took the test a second time. Of these, four (50%) increased their score an average (median) of 20 points the second time, while four obtained lower scores. On the other hand, of the eleven persons who had original scores under 500, seven (63%) obtained better scores the second time around; the median increase was 50 points. For those whose original score was under 400, all three (100%) increased their score the second time. The increases ranged from 60 to 140 with a median of 110. Thus, the lower the original score, the greater the probability of an increase, and the greater the amount of the increase.

The data were also analyzed in terms of the number of months that intervened between the two test administrations. Approximately 25% of the sample retook the examination in one or two months, 25% retook it in three to six months, and about 50% retook it after seven or more months. While the results must be considered tentative due to the small number of cases; for the verbal test, they indicate a very small positive relationship ($r = +.11$) between score increase and the number of months between administrations. The correlation is somewhat higher ($4 = +.33$) for the advanced test, indicating a tendency for a person's score increase to be greater when the time between administrations is greater. On the quantitative test, a negative correlation of $-.25$ was obtained, indicating that the greatest increases were obtained by those who retook the test within a month or two.

Finally, test-retest correlations were obtained by correlating the original scores with those obtained on the retest. The correlation coefficients were $+.47$ on the verbal examination, $+.63$ on the quantitative, and $+.69$ on the advanced test. These correlations are only moderate, and are lower than the figures of .80 to .90 reported by Campbell, Hilton, and Pitcher (1960). The lower correlations obtained in the present study might be the result of the size or special nature of the present sample.

Conclusions. While the results obtained must be considered tentative as a result of the small sample, the general conclusion conforms

to results previously reported in the literature: when students take the GRE a second time, they tend to obtain higher scores than were obtained on the first administration. There was also evidence of regression effects; students whose original scores were low were more apt to get a higher score the second time, and also increased their scores on the average more than those with high original scores.

The effect of retaking the GRE varies, depending on which part of the examination is retaken, and when it is retaken. 1) When the verbal examination is retaken, the odds are approximately three to two that the second score will be higher than the first. The average change is an increase of 21 points, and there is little relationship between the extent of the increase and the amount of time between administrations. 2) When the quantitative examination is retaken, the odds are about two to one that the second score will be higher, and the average increase is 30 points. The greatest increase is obtained when the test is retaken after waiting only a month or two. 3) When an advanced test is retaken, the odds are very high, nine to one, that the second score will be higher. The average increase obtained by the present sample was 64 points. The increase tended to be larger when there was a longer time interval between the first and second administration.

References

Campbell, Joel T., Hilton, Thomas L. & Pitcher, Barbara. Effects of repeating on test scores of the Graduate Record Examinations. Princeton, N. J.: Educational Testing Service, 1967.

Levine, R. S. & Angoff, W. H. The effects of practice and growth on scores on the Scholastic Aptitude Test. Princeton, N. J.: Educational Testing Service, 1968.

Weiss, R. A. The effects of practicing a test: a review of the literature. Princeton, N. J.: Educational Testing Service, 1961.